COPD—Cost Studies

COSTS OF COPD IN GERMANY—RESULTS OF A COST-OF ILLNESS STUDY
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OBJECTIVE: To assess the costs of COPD from the societal perspective in Germany. METHODS: The 1-year resource use associated with COPD was documented retrospectively for the year 2001, based on medical charts of 321 patients selected at random and suffering from mild, moderate, or severe COPD. Costs were assessed for each stage of disease severity and weighted to total costs using the relative frequency of COPD severity stages derived from an epidemiological pre-study. RESULTS: Annual COPD-related costs per patient and year were €3027 from the societal perspective. The main cost drivers were hospitalisations, accounting for 26% of total costs, followed by medication (23%) and early retirement (17%). Costs increased with disease severity from €2364 (mild) to €6585 (severe). Mainly, the COPD-related expenditures for hospitalisation, nursing and for early retirement increased with the disease severity. Forty percent of the costs were caused by COPD exacerbations while the other 60% were due to the basic treatment of COPD. The average costs per exacerbation amounted to €412. Large differences were observed between the costs of an exacerbation, which required in-hospital treatment and those, which could be treated in the outpatient setting only. Following the results of our analysis, the main part of the costs (64%) were covered by the sickness funds. Assuming COPD prevalence rates between 3.3% and 5%, annual costs of COPD range between €8.21 billion and €12.44 billion from the societal perspective. CONCLUSION: COPD causes a significant economic burden in Germany. The costs are mainly determined by the disease severity and the appearance of exacerbations, which require hospitalisations. Thus, it is extremely important not only for the patients’ well-being but also from an economic point of view to prevent COPD and to identify optimal COPD treatments, which are able to reduce disease progression and avoid costly exacerbations.

COST OFFSETS FROM PRESCRIPTION COVERAGE OF AGED PERSONS WITH COPD
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Numerous studies have shown that appropriate drug use can reduce hospitalization and other more expensive therapies. Some commentators argue that these findings imply that drug coverage pays for itself. As appealing as this conclusion may be, there is no credible research literature to support it. OBJECTIVES: This study is one of a series to assess the extent to which extending drug coverage to all US Medicare beneficiaries would result in cost savings elsewhere in the Medicare budget. Using data from the Medicare Current Beneficiary Survey (1996–2000), we assess each link in the causal chain between drug coverage and other health care spending for a sample of beneficiaries diagnosed with COPD. We selected COPD for 3 reasons: it is a prevalent problem affecting about 16% of the population over 65, acute exacerbations of the disease are sensitive to medication therapy, and there are reports that under-medication may be associated with lack of prescription coverage. We compared expenditures for COPD patients with and without drug coverage controlling for selection effects and other confounders using two METHODS: 1) A general linear regression model with a gamma distribution and a log link function, and 2) by weighting sample observations based on propensity scores. The propensity scores were derived from a logit regression of prescription coverage status on a rich set of sociodemographic variables and a medical expenditure risk adjuster specifically designed for use with Medicare claims. Our results indicate that for every 10% increase in the generosity of drug coverage, drug spending rises between 3% and 4%, while inpatient hospital and physician spending each decline by 3% to 4%. The generalizability of these results to older people with other chronic conditions is discussed.

RESPIRATORY DISORDERS—Clinical Outcomes Studies

DO RESPIRATORY DRUGS REDUCE HOSPITAL ADMISSIONS? AN ECOLOGICAL STUDY CARRIED OUT IN MODENA, ITALY, TO INVESTIGATE DISTRICTS’ VARIABILITY
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OBJECTIVES: To verify if the variability observed in prescription of respiratory drugs is related to a different hospital admission rate for respiratory diseases (asthma and chronic obstructive pulmonary disease, COPD). METHODS: We carried out an ecological study in the Local Health Unit of Modena (632,000 inhabitants, 7 districts, 517 general practitioners—GPs- and 40 primary care groups). Every GP, primary care group and district receives two different reports quarterly, both weighted for age and sex. The first report is on drugs prescribed and reimbursed by the National Health System (NHS) and the second one on NHS hospital admissions. For drug consumption, data are retrieved from the 157 retail pharmacies in Modena. The chosen indicators are per person...
expenditure and defined daily doses (DDD) per 1000 inhabitants/day. Drugs are examined according to the ATC (Anatomic Therapeutic Chemical) classification. The main indicator for hospital admissions is the number of admissions per 1000 inhabitants/year. Our preliminary analysis focused on respiratory drugs and hospital admissions for asthma and COPD in Modena districts. RESULTS: In year 2000, overall and per person expenditure for respiratory drugs were €6,614.098 (7.5% of total expenditure) and €10.6, respectively. We observed variability in drug prescription among districts: extreme values were reported for districts of Mirandola, 44.1 DDD per 1000 inhabitants/day, and Carpi, 35.3. Asthma and BPCO admission rates showed a broad variability as well: 3.2 and 3.3 admissions per 1000 inhabitants/year for Carpi and Mirandola, respectively, and 8.4 for Pavullo. Our analysis showed no correlation between drug prescription and hospital admission: districts with similar admission rates (Mirandola and Carpi) reported quite different values in drug prescription. CONCLUSIONS: These preliminary findings are the starting point for more specific analyses that will explore possible determinants of the observed variability in order to increase appropriate use of drugs.

RESPIRATORY DISORDERS—Cost Studies

COST-EFFECTIVENESS OF BUPROPION SR IN THE TREATMENT OF TOBACCO DEPENDENCE

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Objective: The objective of this analysis is cost-effectiveness comparison of bupropion SR in the treatment of tobacco dependence versus: placebo, nicotine replacement therapy (NRT), bupropion SR used in combination with NRT (BUPR+NRT). METHODS: The efficacy analysis was carried in accordance with guidelines for systematic review basing on credibility criteria of the Cochrane Collaboration—Cochrane Reviewers’ Handbook and Evidence Based Medicine. Cost analysis included direct costs from payer’s extended perspective (public resources and the patient), collected in Poland. Sensitivity analysis was performed, with consideration of the variable costs of NRT. RESULTS: The results of meta-analyses showed a statistically significant increase of successful attempts of tobacco cessation with the use of bupropion versus placebo by 10.7% per year (ARR). Bupropion also shows a statistically significant superiority in relation to NRT. The odds ratio of one-year-long abstinence with the use of bupropion versus NRT is 2.0 [CI 95% (1.2–3.4)]. The economic analysis has shown that the most cost-effective is bupropion used in combination with medical advice. The cost of maintaining abstinence for the lifetime as a result of the use of bupropion in combination with medical advice, calculated for one patient, is €2,948,70; cost for LYG is €1,474,35; cost for QALY is €1,092,23 (2002 average exchange rate: €1 = 3,86 PLN). The least favourable is NRT. The technology being the combination of NRT and bupropion has intermediate cost-effectiveness results. The cost of medical advice has not been considered in the analysis. CONCLUSIONS: It may be stated that bupropion is a medicinal product statistically significantly more effective versus placebo and NRT in the treatment of nicotine dependence. Bupropion is a cost-effective technology, where the cost for LYG is significantly lower than the cost-effectiveness threshold (€10,362,69/dialytherapy/patient per year).

ESTIMATING HOSPITAL BURDEN DUE TO PNEUMONIA, ASPIRATION, AND ACUTE LUNG FAILURE: DATA FROM THE NATIONAL HOSPITAL DISCHARGE SURVEY (NHDS)

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OBJECTIVE: Acute lung failure (ALF), often resulting from pneumonia and/or aspiration, is associated with high mortality. The objective of this study was to estimate the resource burden of ALF events by characterizing pneumonia-associated ALF using NHDS 2000 data. It was hypothesized that using ALF diagnosis codes alone may not capture all events; ventilation may be an important indicator. METHODS: A base population was ed using pre-defined diagnosis codes for pneumonia and aspiration. It was stratified using various combinations of diagnostic and procedure groupings: pneumonia, aspiration, or both; ALF; intubation and ventilation use; discharge status; and age. Weighting allowed for extrapolation to the U.S. civilian population. RESULTS: Of the estimated 35,348,186 U.S. hospital discharges in 2000, 2,388,996 (6.8%) were associated with pneumonia and/or aspiration. Of these, 192,975 (8.1%) required ventilation, with approximately 82,840 (43%) of them requiring ventilation for ≥96 hours. Comparatively, 278,678 (11.7%) of pneumonia and/or aspiration discharges were coded as ALF; approximately 64,194 (23%) of them required ventilation for ≥96 hours. Note that overlap exists among these 2 subgroups (38.9% with both ventilation and ALF), but was not extensive as hypothesized. Of pneumonia and/or aspiration discharges with ventilation for ≥96 hours, median length of stay (LOS) was 19 days when discharged alive and 15 days when discharged dead (overall median = 18 days). Of pneumonia and/or aspiration discharges with ventilation for <96 hours, median LOS was 8 days when discharged alive and 4 days when discharged dead (overall median = 7 days). CONCLUSIONS: The NHDS is a useful resource for estimating the economic burden of ALF during hos-